=> fil reg
FILE 'REGISTRY' ENTERED AT 10:28:16 ON 15 JAN 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 12 JAN 2005 HIGHEST RN 812631-13-3
DICTIONARY FILE UPDATES: 12 JAN 2005 HIGHEST RN 812631-13-3

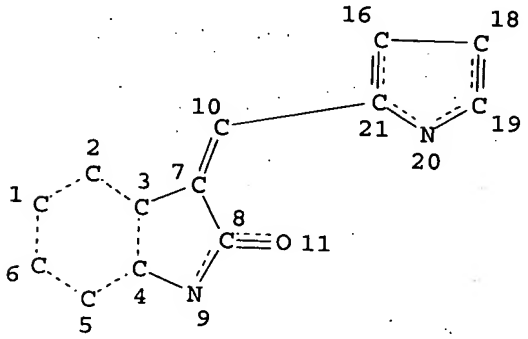
TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

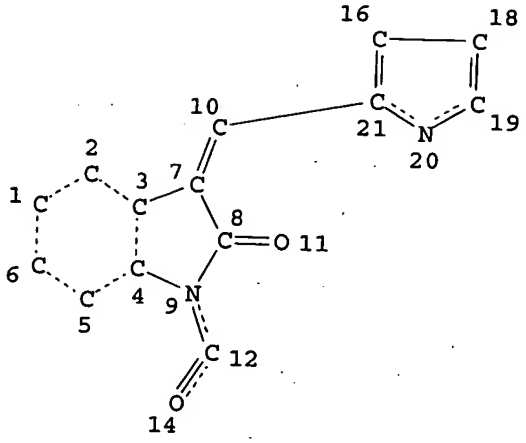
=> d sta que l28
L20 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
L22 2680 SEA FILE=REGISTRY SSS FUL L20
L23 STR



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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
L25 48 SEA FILE=REGISTRY SUB=L22 SSS FUL L23
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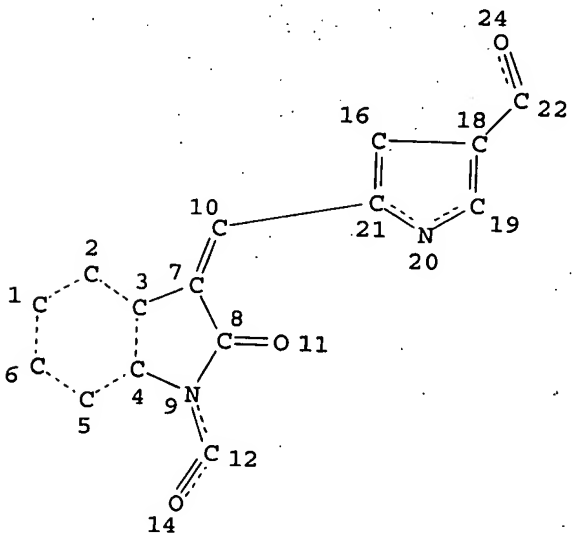

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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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STEREO ATTRIBUTES: NONE
L28 0 SEA FILE=REGISTRY SUB=L25 SSS FUL L26

100.0% PROCESSED 0 ITERATIONS 0 ANSWERS

SEARCH TIME: 00.00.01

=> => fil marpat
FILE 'MARPAT' ENTERED AT 10:31:10 ON 15 JAN 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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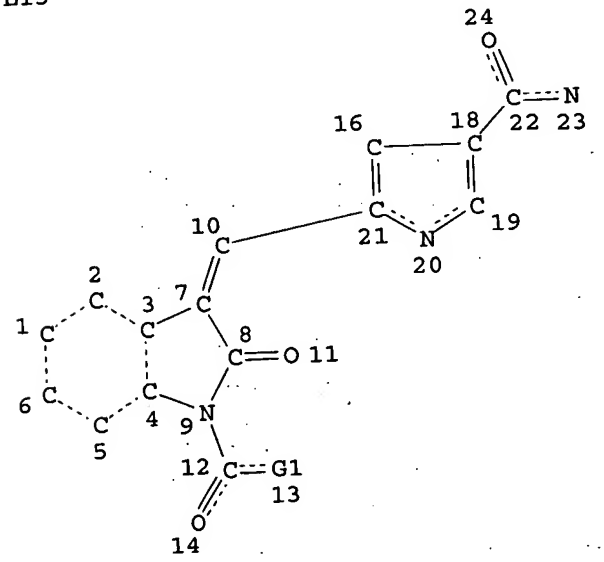
FILE CONTENT: 1988-PRESENT (VOL 142 ISS 01)(20050107/ED)

MOST RECENT CITATIONS FOR PATENTS FROM FIVE MAJOR ISSUING AGENCIES
(COVERAGE TO THESE DATES IS NOT COMPLETE):

US 6806291 19 OCT 2004
DE 10316402 21 OCT 2004
EP 1471568 27 OCT 2004
JP 2004300045 14 NOV 2004
WO 2004101522 25 NOV 2004

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

=> d sta que
L15 STR



N @15

VAR G1=O/15
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NSPEC IS RC AT 15
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
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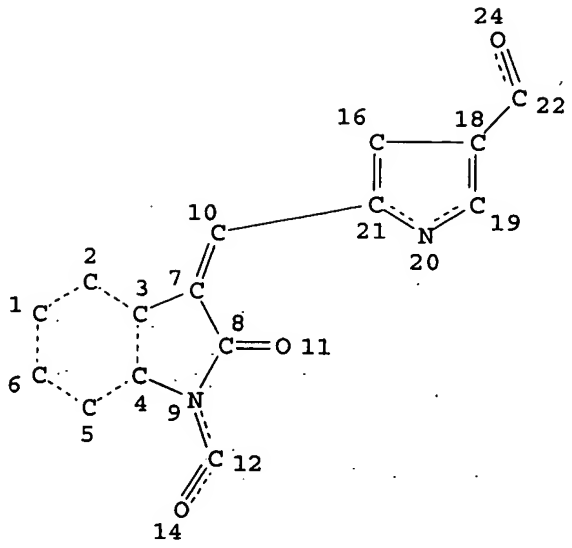
STEREO ATTRIBUTES: NONE
L26 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
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GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE
L30 8 SEA FILE=MARPAT SSS FUL L26
L31 4 SEA FILE=MARPAT SUB=L30 SSS FUL L15

100.0% PROCESSED 8 ITERATIONS 4 ANSWERS
SEARCH TIME: 00.00.01

=> => d bib abs qhit retable tot l31

L31 ANSWER 1 OF 4 MARPAT COPYRIGHT 2005 ACS on STN
AN 138:4517 MARPAT
TI Preparation of 3-heteroarylmethylidene-2-indolinone protein kinase inhibitors for use against cancer and other disorders
IN McMahon, Gerald; Tang, Peng Cho; Sun, Li
PA Sugen, Inc., USA
SO U.S., 64 pp., Cont.-in-part of U.S. Ser. No. 74,621.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 3

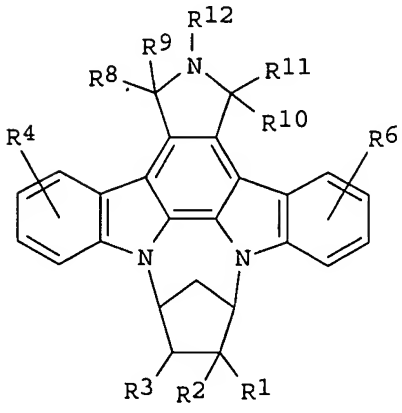
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6486185	B1	20021126	US 1998-191458	19981112
	US 6316429	B1	20011113	US 1998-74621	19980507
	US 2002156083	A1	20021024	US 2001-819698	20010329
	US 6683082	B2	20040127		
	US 2004106630	A1	20040603	US 2003-725079	20031202
	US 2004106618	A1	20040603	US 2003-725267	20031202
PRAI	US 1997-45838P	19970507			
	US 1997-59677P	19970919			
	US 1998-74621	19980507			

ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:467897 CAPLUS
DOCUMENT NUMBER: 141:38635
TITLE: Preparation of N,N-bridged, nitrogen-substituted carbacyclic indolocarbazoles for use in pharmaceutical compositions as protein kinase inhibitors
INVENTOR(S): Monse, Barbara; Braxmeier, Tobias; Ferrand, Sandrine; Gordon, Sandra; Klafki, Hans; Lahu, Gezim; Roder, Hanno; Sahagun-Krause, Heidi; Seneci, Pierfausto; Thillaye du Boullay, Olivier
PATENT ASSIGNEE(S): Nad A.-G., Germany
SOURCE: PCT Int. Appl., 89 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004048384	A1	20040610	WO 2003-EP13322	20031126
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10255343	A1	20040617	DE 2002-10255343	20021127

PRIORITY APPLN. INFO.: DE 2002-10255343 A 20021127
OTHER SOURCE(S): MARPAT 141:38635
GI



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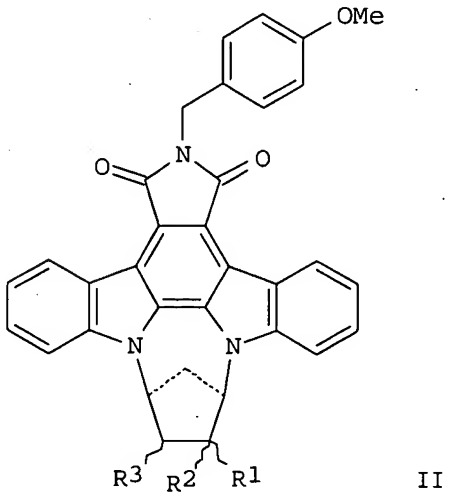

II

AB This invention relates to the preparation of novel carbacyclic indolocarbazoles, such as I [R1 = NR13R14; R2 = H, CN, alkyl, aryl, heteroaryl, acyl, carboxy, carboxamido; R1R2 = spiro nitrogen containing heterocycle, such as spirohydantoyl; R3 = H, OR13, OCOR13, OCONHR13, OCONR13R14; R1R3 = fused heterocycle, such as -OSO2O-, and R2 = H; R4, R6 = H, CN, halogen, alkyl, alkenyl, alkynyl, aryl, heteroaryl, alkoxy, acyl,

carboxy. carboxamido, etc.; R8R9, R10R11 = H2, O, S; R8 = H, R9 = OH; R10 = H, R11 = OH; R12 = H, alkyl, cycloalkyl, benzyl aryl heteroaryl, acyl, carboxy, etc.; R13, R14 = H, alkyl, cycloalkyl, acyl, aryl, etc.], for therapeutic use as **protein kinase** inhibitors with advantageous pharmaceutical properties. These indolocarbazoles are claimed for use in the treatment of CNS diseases, non-insulin-dependent diabetes mellitus, acute stroke and other **neuro**-traumatic injuries, diabetes mellitus, malignant diseases, diseases caused by malfunctioning of specific signaling pathways and neurodegenerative diseases, such as Alzheimer's disease. Thus, indolocarbazole II (R1 = β-NH2, R2 = α-H, R3 = H) was prepared starting from cyclopentadiene, 4-methoxybenzyl amine, dichloromaleic anhydride, and **indole** via a multistep synthetic sequence which included a reaction of 12,13-dihydro-6-[(4-methoxyphenyl)methyl]-5H-indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6H)-dione with cis-3,5-dibromocyclopentene using NaH in THF to form II (R1R3 = bond, R2 = H) in 90.4% yield. II (R1R3 = bond, R2 = H), which contains the target ring skeleton, further underwent an hydroxylation sequence using BH2.THF followed by NaOH and H2O2 to form alc. II (R1 = α-OH, R2 = β-H, R3 = H), oxidation of the alc. to the corresponding ketone II (R1R2 = O, R3 = H), reaction of the ketone with benzylamine to give N-benzyl amine II (R1 = β-NHCH2Ph, R2 = α-H, R3 = H) and, finally, N-debenzylation to give the desired indolocarbazole II (R1 = β-NH2, R2 = α-H, R3 = H). The prepared indolocarbazoles were assayed for inhibiting the activity of a group of protein kinases consisting of extracellular signal regulated kinase 2 (ERK2), **protein kinase** A (PKA), **protein kinase** C (PKC) and glycogen synthase kinase 3β (GSK3β).